

BACKGROUND OF THE INVENTION

1. Cross-Reference to Related Application

ME
6/15/2000
5 This application is a divisional of U.S. Application No. 09/952,574, entitled "Method and Apparatus for Producing a Curly Puff Extrudate" and filed on September 10, 2001, which is hereby incorporated herein by reference. ^{now U.S. Patent 6,722,873}

2. Technical Field

The present invention relates to the production of a spiral shaped puff extrudate and, in particular, to confining the extrudate in a tube or like peripheral containment vessel while
10 applying a force or resistance on the extrudate downstream of the extrudate's glass transition point. The downstream force or resistance causes the otherwise linear extrudate to "back-up" into the containment vessel, thus coiling into the spiral or curl shape.

3. Description of Related Art

The production in the prior art of a puffed extruded product, such as snacks produced and
15 marketed under the Cheetos™ brand label, typically involves extruding a corn meal or other dough through a die having a small orifice at extremely high pressure. The dough flashes or puffs as it exits the small orifice, thereby forming a puff extrudate. The typical ingredients for the starting dough may be, for example, corn meal of 41 pounds per cubic foot bulk density and 12 to 13.5% water content by weight. However, the starting dough can be based primarily on
20 wheat flour, rice flour, soy isolate, soy concentrates, any other cereal flours, protein flour, or fortified flour, along with additives that might include lecithin, oil, salt, sugar, vitamin mix, soluble fibers, and insoluble fibers. The mix typically comprises a particle size of 100 to 1200